Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method for synchronizing frames by using pilot patterns in a compressed mode at a mobile terminal, the method comprising ~~the steps of~~:

~~(a) puncturing pilot bit sequences of frame synchronization words to be transmitted over one frame as many as desired number of slots;~~

~~(b) receiving a series of codes of the punctured frame synchronization words;~~

~~(c) restoring the frame synchronization words in frames by using correlation of the received series of codes;~~

~~(d) attaining a frame synchronization with respect to a channel by using correlation of the restored frame synchronization words~~

(a) receiving compressed pilot bit sequences of frame synchronization words over a frame, pilot bit sequences being classified into pairs and two pilot bit sequences of each pair having a relation, one pilot bit sequence of each pair being the other pilot bit

sequence shifted by a predetermined bit length and then inverted in accordance with the relation;

(b) restoring the pilot bit sequences of the frame synchronization words over the frame by using the relation; and

(c) attaining a frame synchronization over the frame with respect to a channel using the restored pilot bit sequences.

2. (Currently Amended) ~~A~~ The method as claimed in claim 1, wherein the step ~~(c)~~ (b) includes ~~the steps of~~;

~~classifying a plurality of codes into classes each with a fixed number of codes,~~ ~~and~~ restoring ~~bits of the codes not transmitted owing to the puncturing~~ the pilot bit sequences from the compressed pilot bit sequences by using a relation $C_{i,j} = - C_{i+1(j+7)\bmod 15}$ of ~~a code~~ each pair ~~in each of the classes~~,

wherein $C_{i,j}$ represents a (j)th slot bit of a pilot bit ~~pattern~~ sequence C_i, i = 1, 3, 5, 7, and j = 0 ~ 14.

3. (Currently Amended) ~~A~~ The method as claimed in claim 1, wherein the step ~~(c)~~ (b) includes ~~the steps of~~;

~~classifying a plurality of codes into a number of classes, and~~

restoring ~~bits of the codes not transmitted owing to the puncturing~~ the pilot bit sequences from the compressed pilot bit sequences by using a relation $C_{i+1,j} = - C_{i,(j+8)\bmod}$

15 of ~~a code~~ each pair ~~in each of the classes~~,

wherein $C_{i,j}$ represents a (j)th slot bit of a pilot bit ~~pattern~~ sequence C_i, i = 1, 3, 5, 7, and j = 0 ~ 14.

4. (Currently Amended) ~~A~~ The method as claimed in claim 1, wherein the step ~~(d)~~ (c) includes ~~the steps of~~;

classifying ~~the restored frame synchronization words into a number of classes of a frame synchronization words pair~~ the restored pilot bit sequences of frame synchronization words into pairs, and

implementing the frame synchronization of the channel by using at least one of cross correlation functions of ~~the frame synchronization word~~ each pair ~~in each of the classes~~.

5. (Currently Amended) ~~A~~ The method as claimed in claim 4, wherein, if the restored pilot bit sequences of the frame synchronization words are eight, which can be classified into the following four ~~classes~~ pairs,

E = {C1, C2}, F = {C3, C4}, G = {C5, C6}, H = {C7, C8},

each ~~of code pairs in each of the classes~~ pair can be expressed in a cross correlation function as the following equations[[.]].

$$R_{i,j}(\tau)=\begin{cases}-15, & \tau=7\\ 1, & \tau\neq 7\end{cases}$$

$$R_{j,i}(\tau+1)=\begin{cases}-15, & \tau=7\\ 1, & \tau\neq 7\end{cases}$$

~~Where~~ where i, j = 1, 2, -----, 8.

6. (Currently Amended) A method as claimed in claim 1, wherein the step ~~(d)~~ (c) is implemented by at least one of auto-correlation function of the ~~frame synchronization words~~ restored pilot bit sequences.

7. (Currently Amended) ~~A~~ The method as claimed in claim 6, wherein, if the restored pilot bit sequences of the frame synchronization words are eight, which can be classified into the following four ~~classes~~ pairs,

E = {Cl, C2}, F = {C3, C4}, G = {C5, C6}, H = {C7, C8},

each ~~of code pairs in each of the classes~~ pilot sequence in each pair can be expressed in an auto-correlation function as the following equation[[.]],

$$R_i(\tau)=\begin{cases}15, & \tau=0\\ -1, & \tau\neq 0\end{cases},\quad i, j = 1, 2, \text{-----}, 8.$$

8. (Currently Amended) ~~A~~ The method as claimed in claim 1, wherein the step ~~(d)~~ (c) is implemented by using both the auto-correlation and cross correlation of the restored pilot bit sequences of the frame synchronization words.

9. (Currently Amended) ~~A~~ The method as claimed in claim 8, wherein the step ~~(d)~~ (c) includes ~~the steps of~~;

~~(a)~~(a-1) auto-correlating the restored pilot bit sequences of the frame synchronization words ~~which are pilot bit sequences,~~ to provide a final auto-correlation result,

~~(b)~~(b-1) cross correlating the pilot bit sequences of the restored frame synchronization words, to provide a final cross correlating result,

~~(c)~~(c-1) negatively summing the auto-correlation result and the cross correlation result,

~~(d)~~(d-1) comparing the summed correlation results to a preset threshold value β,

~~(e)~~(e-1) determining a frame synchronization success for the ~~received~~ channel according to a result of the comparison, and

~~(f)~~(f-1) reporting the result of the determination to an upper layer.

10. (Currently Amended) ~~A~~ The method as claimed in claim 9, wherein, in the cross correlating step, the restored pilot bit sequences of the frame synchronization words are classed into a number of ~~classes corresponding to frame synchronization word~~ pairs, and one ~~word of the frame synchronization word pair in one class~~ pilot bit sequence of each pair is the other ~~word~~ pilot bit sequence of each pair being cyclic shifted by 7 bits and inverted.

11. (Currently Amended) ~~A~~ The method as claimed in claim 9, wherein the step ~~(c)~~(c-1) includes ~~the steps of~~;

delaying the auto-correlation result for a certain slot time period while the cross correlation is carried out, and

negatively summing the auto-correlation result and the cross correlation result.

12. (Currently Amended) ~~A~~ The method as claimed in claim 9, wherein the threshold value β is set to a value equal to '0' or greater than '0' depending on ~~an~~ a SNR (Signal to Noise Ratio) ratio.

13. (Currently Amended) ~~A~~The method as claimed in claim 9, wherein the step ~~(a)~~(a-1) includes ~~the steps of~~;

classifying the restored pilot bit sequences of the frame synchronization words

into a number of ~~classes corresponding to frame synchronization word~~ pairs, ~~and~~

~~correlating~~ auto-correlating a first ~~frame synchronization word~~ pilot bit sequence and a second ~~frame synchronization word in each class~~ pilot bit sequence in each pair, respectively, to provide a first auto-correlation result and a second auto-correlation result, and

summing the first auto-correlation result and the second auto-correlation result, to provide the final auto-correlation result.

14. (Currently Amended) ~~A~~The method as claimed in claim 9, wherein the step ~~(b)~~(b-1) includes ~~the steps of~~;

classifying the pilot bit sequences of the restored frame synchronization words into a number of ~~classes corresponding to frame synchronization word~~ pairs, ~~and~~

cross correlating a second pilot bit sequence of the frame synchronization ~~word~~ words of each pair with respect to a first pilot bit sequence of the frame synchronization ~~word in each class~~ words in each pair, to obtain a first cross correlation result, ~~and~~

cross correlating the first pilot bit sequence of the frame synchronization ~~word~~ words with respect to the second pilot bit sequence of the frame synchronization ~~word~~ words in each ~~class~~ pair, to obtain a second cross correlation result, and

summing the first cross correlation result and the second cross correlation result, to obtain a final cross correlation result.

15. (New) The method as claimed in claim 1, wherein, at a base station, the pilot bit sequences of the frame synchronization words are punctured over the frame for a desired number of slots upon transmission.

16. (New) The method as claimed in claim 15, wherein the pilot bit sequences of the frame synchronization words punctured over the frame include seven bits at maximum.